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Virginia Wildlife

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SEPTEMBER

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COVER: From Nova Scotia to Mexico there is perhaps no bird better known or better loved than the eastern mourning dove. Swift and graceful in flight, the mourning dove over ripening grain is a typical September scene throughout Virginia. Painting by John W. Taylor, Edgewater, Maryland.

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EDITORIAL

Law Enforcement

LABOR Day is supposed to mark the end of "the season" as vacationists leave their summer gathering places and settle once again into the routine of office, home or school; but for the real outdoorsman the most fabulous season of them all is just beginning. Rail birds are in the marshes, and clapper and sora hunters will need only the help of a high tide and an east wind to get them up. Doves, and dove hunters, soon will flock to freshly harvested grain fields. Bass and bluegill are feeding ravenously. And for those who find joy in taking a cruise just for the pure pleasure of it, the beckoning of broad, sparkling water is never more urgent than on a bright September or October day.

This is an incredibly busy time for game wardens. Their work load builds, as autumn progresses, and reaches its climax after the last opening day is long gone and the appeal of the outdoors has begun to wane at winter's approach. There are licenses to be examined, game bags and fish stringers to be checked, boats to be boarded and inspected and the inevitable trespass cases to be investigated, because there remain among us a few who continue to believe that license requirements, game and fish limits, safety laws and the rules of sportsmanship apply to somebody else but not to them.

Law enforcement is not the only job of the game warden (although it is his primary responsibility), and a game warden's work is not to be judged entirely by the number of arrests and convictions he records. Prevention of violations before they occur is as important as providing swift and sure punishment afterwards.

This fall game wardens will call at 400 schools throughout the state to help encourage participation in the 20th annual Wildlife Essay Contest and to make personal contacts with thousands of today's students, tomorrow's adult sportsmen.

This year some 30,000 young hunters in Virginia will receive a course in hunting safety, a large majority of them trained by game wardens to be safer as well as better sportsmen in years to come.

Between now and next planting season wardens will inspect thousands of wildlife food patch sites, and will deliver tons of planting material (enough to seed 10,000 one-eighth acre plots) to landowners who want to grow more small game on their lands.

All these and a host of other equally worthwhile activities put heavy demands on the warden's time and energy. Still, he cannot slight his first responsibility, which is that of an officer committed under oath to firm, vigorous and impartial law enforcement. Research and scientific resource management have made great strides during the last two or three decades, but the cornerstone of effective wildlife management still is compliance with the law. There are those who would leave the entire bill for the rest of us to pay, if they did not expect some day to run across a warden checking licenses. There are those who would not play the game honestly, as far as open seasons and limits are concerned, if left to their own devices.

This is a busy season—one of several—for game wardens. If the man in uniform who asks to see your license, and your game bag or fish stringer, seems to be in a hurry, he probably is. He has a long way to go before he earns his rest. He is not an adversary, out to "catch you." If you are an honest sportsman, it is *your* interests he is protecting, and he is doing a good job of it. You might even consider telling him so next time he comes around. Not many of us do, and he would appreciate it.—J.F.Mc.

LETTERS

Clean Water

SINCE *Virginia Wildlife* consistently supports clean water for use by our citizens, I thought you would be interested in this communication received from a retired army officer considering Virginia for his home:

> "Having retired this past year, we are considering the purchase of a rather expensive property fronting on the ———— River.
>
> "The question we have in mind pertains to water pollution that might affect marine life in this area, such as clams, oysters, crabs and fish. . . . One of our reasons for considering a new home in Tidewater Virginia fronting on one of the rivers or the Bay is the abundance of seafood in this area and the opportunity for having a private oyster bed, being able to crab, fish, etc.
>
> "Would you be so kind as to advise us of the present conditions of these waters?"

Unpolluted marine waters are a prime resource of the state which attracts many desirable citizens. Virginia has had a record of maintaining clean waters and in securing hetter treatment of domestic and industrial sewage leading to reduction in the degree of pollution.

The Virginia Institute of Marine Science is happy to be able to assure Mr. B———— that he can confidently expect to use the water in front of the property he anticipates huying, and that he may derive pleasure from fishing, crabbing, oystering and clamming, and for any other recreational uses.

Robert Bailey
Information Officer
Virginia Institute of
Marine Science
Gloucester Point

"Shoots" Woodcock in May

I ENCLOSE a picture of a young woodcock, I think, photographed on May 5 this year near Rawley Springs, 12 miles west of Harrisonburg.

Wallace Obaugh
Hinton

We think that your identification is correct, and also that this is a rather unusual wildlife photograph since young woodcock are not easy to find and photograph even where they are relatively plentiful.—Ed.

Wings Over Grain Fields

By DR. GEORGE W. CORNWELL
Editor, "Virginia Outdoors"
Blacksburg

A DARTING, twisting, whistling-winged flock of grayish-blue birds fly low over the cut corn. Five shotgun blasts ring out, echoing off the nearby woods, the echo following the swift-flying birds as they dart off in a new direction, untouched.

So opens the dove season in Virginia, with the streamlined and evasive mourning dove serving well as target and game animal. It takes a skilled dove hunter to score a hit on 50 percent of his shots. The typical Mr. Dove Hunter is more likely to harvest 1 dove with every 4 or 5 shells.

The mourning dove, otherwise called the wood dove, rain crow, turtle dove, and wild dove, depending on where you hail from, is known by nearly everyone who can tell an eagle from a sparrow. Its streamlined body, its long pointed tail, and swift darting flight are characteristic.

Although recognized by all but 17 states as an outstanding game bird, the mourning dove is equally well known by naturalists, bird watchers, and all who enjoy walking hand-in-hand with nature. Its soft, mournful *coo, coo, coo* drifts through the leafless trees of early spring, bringing a promise of green leaves, spring flowers and a wild chorus of birdsongs.

Mourning doves, in a way, belong to the open country. They are ground feeders, searching for food in grain fields, gardens, and pasture lands. Their preferred foods are weed seeds and waste grain. Buckwheat appears to be one of their favorites. Like all members of the pigeon family, the younger mourning doves are fed at first on "pigeon milk," a thick creamy material secreted in the glandular stomach of the adult birds. When weaned from their diet of pigeon milk at about the age of 2 weeks, the young are then fed worms, insects, and seeds.

Youth for mourning doves, as for other animals, is a very dangerous time when death waits just around the corner. It is ironic that one of the most common causes of death of young doves, a disease caused by a protozoan parasite liv-

Commission photo by Kesteloo

ing in the glandular stomach of the parent birds, is given to them in the pigeon milk manufactured by the parents.

Anyone who notices the birds around him, and particularly the hunter looking forward to opening day, is aware of many more doves in the fall than other seasons of the year. This annual autumnal peak in abundance of mourning doves is a result of their ability to reproduce. Unlike most of our native game birds, the mourning dove produces several broods each year. A pair of doves can raise only two young at a time, but they may nest six or seven times a year. A little more than half of these nesting attempts are successful. This productivity permits a liberal hunter harvest without endangering the brood stock for next year.

Mated pairs seem to remain together during the entire year, and the male remains attentive to the female during the nesting season. He also appears to share equally in the tasks of incubating the eggs, feeding the young, and keeping them warm. When an enemy approaches a nest with young birds, one of the parents often drops to the ground and imitates a bird with a broken wing to lead the enemy away.

As is true with all wildlife, massive changes, induced by man, in the dove's environment are more of a danger than hunting. Because their primary foods are weed seeds and waste grains, changes in agricultural practices resulting in cultivated fields growing to brushland, forest, or pasture undoubtedly cause a general decline in dove populations.

As man becomes more efficient in his harvest of grain and more successful in his control of weeds, we are likely to see an even greater decline in the numbers of doves produced in Virginia. Doves, however, are migratory birds and a great many shot in Virginia were hatched and raised in Ohio, Indiana, Michigan, Pennsylvania, and New York.

Hunters for years to come will be pulling triggers on doves; and most of us will have our ears tuned, during the lengthening days of next March, for the sorrowful, tender mating call of the mourning dove.

Commission photo by Kesteloo

The darting, twisting, evasive mourning dove is considered by many shooters to be one of the most difficult targets to be found anywhere. It has become the most popular game bird in many sections of Virginia in spite of the fact, or perhaps because of the fact, that the typical hunter is lucky to down one dove for every four or five shells he fires.

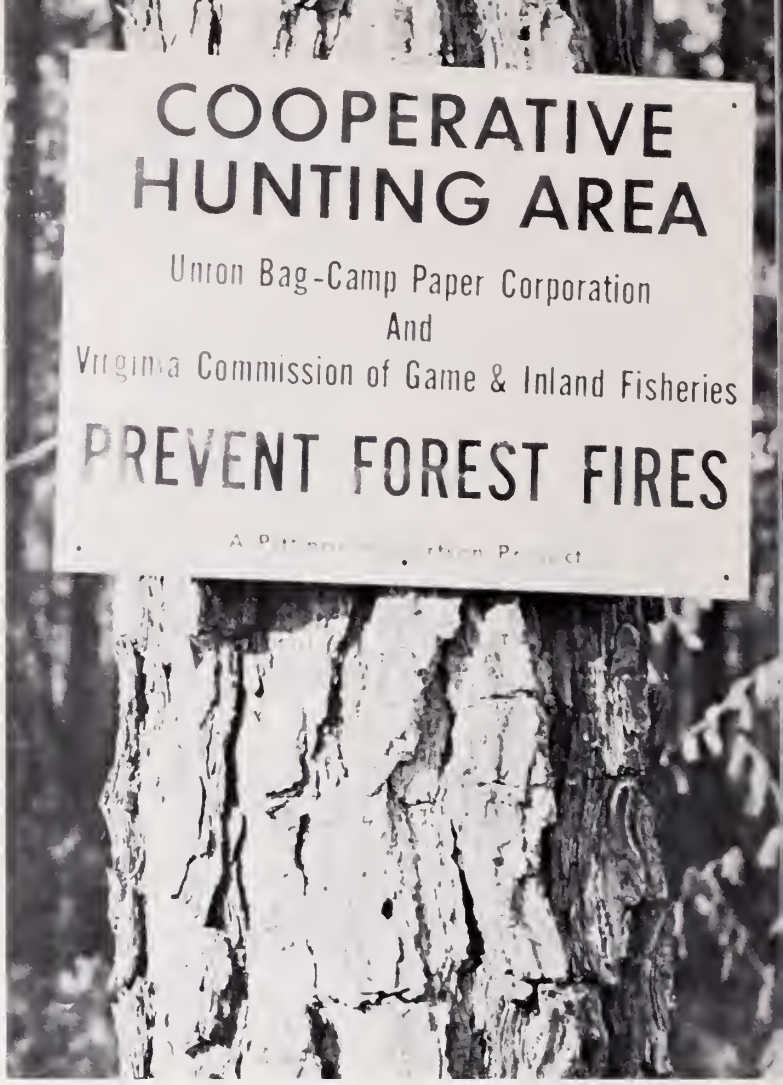
Brunswick Co-op Area Pays Off

By W. ALAN GUTHRIE
District Game Biologist

THE Brunswick Management Area, located in Brunswick County, is one of the more promising public hunting areas in the state. Although many sportsmen have frequently used this area, there are many licensed hunters who are not familiar with it. The purpose of this article is to introduce these Virginia sportsmen to a public hunting area, one which offers a wide variety of good hunting. Other groups who are interested in various aspects of nature study will also find an abundance of fauna and flora for study and observation.

A cooperative agreement between Union Camp Corporation and the Virginia Commission of Game and Inland Fisheries was enacted in 1958. Briefly, this agreement states that Union Camp Corporation, the owner, will permit supervised public use of their land holdings in Brunswick County, south of route 58, in return for (1) the Commission's supervision of hunting whenever necessary, (2) application of approved management practices, (3) close patrol by the county game warden, and (4) assistance in fire detection and suppression. The entire area, a composite of a number of tracts of land, totals approximately 18,000 acres.

One of the first jobs undertaken was the marking of the areas to clearly distinguish Union Camp property from other private land so the public is never in doubt of the extent of their permission. Many miles of boundaries were marked with signs designating it as a public use area.



In order to assist in road maintenance, to keep access lanes open for emergencies, and to encourage propagation of wildlife, a variety of management activities have been undertaken during the past several years. The assistance of the Union Camp wildlife specialist and their foresters has been most valuable in planning various management projects.

Union Camp and Commission personnel have cooperated in spot seeding recently cut-over areas to encourage better quail shooting. Small random spots of Korean lespedeza are broadcast throughout such areas at the same time a new stand of timber is started, and quail shooting, although designed for the rugged hunter due to brush and laps left by the loggers, is nothing short of tremendous—perhaps the best in the state if you are willing to tackle it.

Interior road shoulders have been seeded to prevent erosion, to keep these areas open so the roads will receive more sunlight and dry out faster in wet weather, and, at the same time, provide palatable food for wildlife. Usually a mixture of fescue, clover, and lespedezas is used. Fescue, although not a preferred wildlife food, is eaten occasionally, is always available in emergencies when food is scarce, and is excellent to prevent erosion. Sericea lespedeza also helps prevent erosion. The clover is eaten readily by deer, quail, turkeys and other wild game. And, of course, any quail hunter knows that Korean lespedeza is excellent quail food, as well as being utilized by other wildlife. Thus, the seeding practices which have been employed have met with much success in satisfying both parties involved in the cooperative agreement.

Some maintenance on seeded areas is necessary annually. As one knows, the forest has a tendency to expand and will

Cut-over timber land, with wildlife food patches planted at random throughout, gives the Brunswick cooperative area one of the best quail populations to be found on any large area in the state. The quail shooting is great, for the rugged hunter who can shoot in the brush.

gradually "creep" back to land which has been opened. Therefore, it becomes necessary to clip with a rotary mower road shoulders and access lanes which have been seeded. Otherwise, these road shoulders and access lanes would be nothing more than thick, brushy areas within a couple of years. In addition, application of fertilizer and lime is required periodically, and reseeding is necessary every eight to ten years.

Besides quail, other varieties of wildlife may be found on the Brunswick Management Area. Deer are reasonably abundant, and the size of the herds should increase for several years to come. The tender young shoots which appear quickly in cut-over land provide an abundance of deer browse. Rabbits, too, enjoy these tender hardwood sprouts, and may be found in such areas.

Turkey management is not compatible with logging operations which are common in eastern Virginia. Because of the high cost of land it is necessary to manage the forests intensively for timber production. Although Union Camp utilizes all timber species, a longer rotation management program is necessary for good turkey management. Turkeys depend on hardwood mast for food, and widespread harvest of old-growth oaks, beech, and the like, have, of necessity, reduced turkey populations from levels that were familiar to old-timers. There are, however, some old hardwood stands remaining on the Brunswick Management Area, and turkeys may be found if the sportsmen will scout these areas.

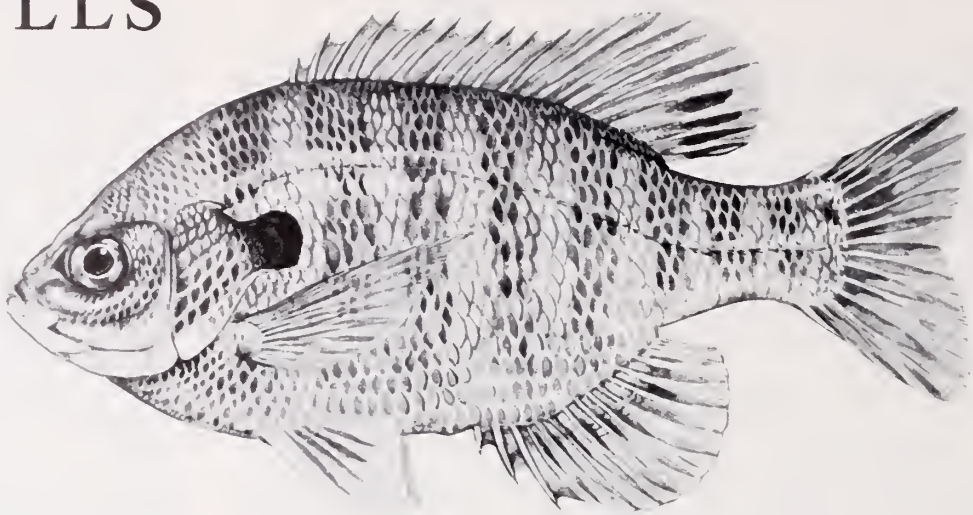
Squirrels, like turkeys, are found in hardwood stands. Some parts of the Brunswick Management Area contain many hickories, beech, and oaks, and offer good squirrel shooting. Raccoons, opossums, and foxes are plentiful throughout this area for those who are interested in hunting them.

Many people have no particular interest in hunting but do enjoy the outdoors. Bird watchers, hikers, picnickers, botanists, ecologists, and others interested in various aspects of nature will find the Brunswick Management Area to their liking. We all are fortunate in having such an area offered to us cooperatively by Union Camp Corporation.

Perhaps only one item remains to be mentioned. That is, what does it cost to use this area? Mother Nature has been kind in providing an abundance of resources, and, as evidenced by its recreation policy, the Union Camp Corporation agrees that the enjoyment of these outdoor resources is to be shared. There is no entrance or user fee. The cost of using this fine area is merely safe, cooperative, and sportsmanlike conduct. That is all the corporate landowner asks of the public in return for an open door policy on the Brunswick Management Area.

After each block of timber is harvested, access lanes are seeded and food plots established at the same time a new stand of timber is started. The brushy growth that springs up on cut-over land provides excellent deer browse for several years. Later, as the young pines grow up and the time for another harvest approaches, openings along seeded interior roads continue to produce abundant wildlife food.

BLUEGILLS



ARE BEST!

By DAVID MYERS
Lignum

THE concentric rings caused by the rising fish slowly disappeared as the angler crept closer to the bank and made ready to cast. Attaching a small dry fly to his leader, he pulled line from his fly reel and began his cast. Softly the small fly settled on the water, and the fish rose again. The fisherman struck and began his battle.

To many fishermen this picture immediately brings to mind a trout stream, but the scene described took place on one of the thousands of farm ponds scattered across Virginia, and the fish was none other than the bluegill sunfish.

Bluegills, or bream as they are commonly called in the South, are probably the most popular freshwater fish in Virginia. They are usually the first fish taken by beginning fishermen, and even expert anglers turn to the bluegills after the trout are gone and the bass fishing slows down during the hot days of midsummer. No matter what the weather, the bluegill can be depended upon to provide action almost anytime.

Although bluegills bite the year around, the best time to fish for them is from mid-April until late November. The biggest bluegills are usually caught in May when they are on the spawning beds. During the hot days of summer they usually go deep except in early morning and late evening, when they come into the shallows to feed.

Although the bluegill is a very small fish, usually weighing between five and ten ounces, he feels at least three times this heavy when caught on light tackle. Probably the most popular tackle and that used by most youngsters is simply a can of worms, a cane or hickory pole, some heavy line or string, a small hook, and a bobber. This is the tackle I used when I took my first bluegill at six years of age. Although I use more expensive tackle now, I still enjoy catching them.

When an angler becomes serious about bluegills, he will generally invest in an ultralight fly outfit which will provide the most fun. I prefer a 7-foot fly rod which casts an L6F fly line perfectly. I use a small single-action fly reel with this rod and a 7½ foot leader testing about three pounds.

The nice thing about bluegills is that they will bite almost any bait tossed in their direction, from live bait to small artificials. Worms, grasshoppers, and crickets are the most popular live baits. Wet and dry flies and popping bugs are the best artificials. My three favorite fly patterns are the Black Gnat, Western Bee, and Muddler Minnow. These flies should be tied on number ten or twelve hooks.

The next time the bigger game fish won't cooperate, you should give these small fighters a try. They'll seldom let you down.

Midsummer in the Marshes

By RUTH S. DURLOO
Vienna

AS July goes into August, there comes a day when you are aware that summer is on its way out. It may be the sight of red leaves in an otherwise verdant dogwood or choke-cherry that tells you so, or the size of the berries forming on the hollies. There is an autumn-like dryness to the day, making the heat quite bearable despite the temperature, and a difference in the way the sun angles down from a cloudless sky. Then you know that fall is not far away; and the remaining weeks of summer seem very precious.

Midsummer is especially pleasant along the marshy creeks of the Northern Neck, where the season has developed slowly. Vivid spikes of cardinal flower and umbels of pink swamp milkweed thrust up among the marsh grasses just as the goldenrod begins to bloom. White and pink mallows unfurl wide, crepy petals to expose their dark red centers. In favored places the golden lotus burst tremendous pointed buds into creamy, scalloped chalices that sway on thick long stems above the enormous green velvet basins of their foliage. White arrowhead and hyacinthine blue pickerel weed make a dainty show at the water's edge.

Carp, yellow perch and bass leap from the water and fall back into their own ripples. Fingerlings rise, skipping over the surface in an effort to avoid becoming someone else's dinner. Dragonflies hover near the water in an eternal frenzy to populate the marsh with their kind. Occasionally, one settles briefly on the boat dock, lacy wings folded back and body almost parallel to the boards.

Our boat, cruising up the creek, puts pintail ducks to flight. Some, unable to become airborne, scud along, churning water, until they disappear into the safety of the lily pads. Redwinged blackbirds swing on cattails and wild rice, singing their pleasant but musically limited song. Clouds of small brown birds rise from the cover of the reeds, circle, and settle again out of our sight. From his vantage point in a tree, a kingfisher plummets like a stone, and rises, heavier by the weight of his catch. Swallows dart and swoop around banks and boathouses. We admire the great grey heron from afar, for he never lets us come close. The usual view of him is as he flaps away, heavy and ungainly, on strong, slow wings.

Muskrats are active in the marshes, and sometimes venture out along the water's edge in daylight.

Photos by L. L. Rue III

Eagerly we await the coming of the egrets, those snow-white wanderers who stalk our marshes after their nesting duties are over for the year.

Eagerly, we wait for the coming of the snowy egrets, the stars of the summer parade. Some years they disappoint us, but when they arrive in numbers we feel well rewarded. Their angular white shapes silhouette dramatically against the summer greenery as they wade stiff-legged in the shade, or stand on one foot among the rushes, or roost in dead trees, like birds in a Japanese print. Each one stalks the marsh alone, but fifteen or more may perch in the same tree.

Now the water snakes are inactive. Perhaps they are getting lazy and fat prior to hibernation. They lie sunning on dead limbs, ready to roll off into the water if occasion warrants it. Now and then one swims the creek, cutting a short-lived V in the water. Turtles, still more wary, drop from their perches with sudden splashes before we are even aware of their presence. In the marsh, man is the intruder, and its denizens let us know it.

The woodchuck who lives in our river bank feasts on ripe blackberries and choke-cherries, leaving evidence of this beside the dock. At night muskrats splash and scuffle in the marsh. Once in a while a raccoon comes to the water's edge, but at sight of us he remembers business elsewhere.

The pleasure of these days is enhanced by the relative absence of insects. Gone are the gnats and deer flies of early summer; it is too soon for the biting flies. We can secure the boat to a tree over-hanging the creek and fish or drowse unmolested in the shade. But our enjoyment of this is dimmed by the realization that some of these trees are doomed. The wake of each speedboat that races up the creek undercuts the bank a little more, until another venerable beech or oak falls.

This is a season of richness and beauty, full of promises about to be kept. It is hot, as an oven is hot with baking. When August goes, the marsh will be bright with yellow daisies of Spanish needles. The wild rice, ripening, will be consumed by birds before they migrate. Acorns begin to fall, and squirrels to hoard them. The number of ducks will increase, and when the long-necked, slow-winging outline of Canada geese rises against the sky, we will have to admit that summer is over.

HONKER--

GAME BIRD OF THE FUTURE?

U.S.F.W.S. photo by Haddon

By C. E. ADDY
Atlantic Flyway Representative
Bureau of Sport Fisheries and Wildlife

IT'S no secret to hunters that duck populations in the Atlantic Flyway have been in the doldrums for several years. The outlook for the immediate future looks a shade brighter, and there is hope that on the long road back we may have as many ducks of the "good eatin'" types as we had back in the mid-fifties. However, the immediate prospect is a continued lower level of hunting opportunity and hunter participation than we had ten years ago.

But, looking at all our cards, is it possible that the Canada goose—the famous honker—can take up some of the slack in waterfowl hunting lost to the ducks? Some folks think so; and with good reason, too.

What is there about the honker that encourages managers to believe that it could provide more hunting recreation than in the past? In the first place, people have found that Canada geese can be rather easily managed compared to many species of game birds. The birds react favorably to situations where plenty of food, water and sanctuary are provided. Geese have different habits from ducks. They will feed exclusively on upland agricultural lands and do not require open water other than as a place to rest, drink and wash. The species has strong homing instincts and can be counted on to utilize specific breeding, migration and wintering areas each year. Geese ordinarily don't stray from established or traditional habitat from year to year as some ducks do. In other words, it appears that if the right conditions were created, new wintering goose flocks could be established in many parts of the flyway where none now exist.

Another encouraging aspect of goose management concerns the breeding grounds. There is evidence that Canadian habitats could accommodate more birds than now occur there. Furthermore, the principal breeding grounds in Quebec and Labrador are so remote and extensive that man's activities are not likely to have a significant destructive effect, at least in the near future. All this seems to add up to the conclusion that if we manage migration and wintering habitats properly and keep the kill within certain limits we can have many more geese in the flyway than we have today.

How Many Geese Do We Have?

Over the past 15 years the numbers of honkers wintering in the Atlantic Flyway have fluctuated between a low of about 300,000 to a high of a little over half a million. During the past five years the population has averaged over 450,000.

The bulk of our Atlantic Flyway Canada geese breed in Canada east of James and Hudson Bays and migrate pretty much directly south to their wintering areas. The heaviest concentration of breeding is on the tundra of the Ungava Peninsula in northern Quebec. For the Mattamuskeet birds, this means a trip one way of over 1700 miles. There are, of course, breeding Canadas thinly scattered throughout the forested muskeg country of eastern Canada as well as in the northern states of the flyway. Some biologists believe there are two forms or races of the big Canada goose in the flyway. However, most people couldn't tell the two apart in the field.

Groups of birds which migrate and winter along the western edge of the Atlantic Flyway, such as in western Pennsylvania, western North Carolina and the Florida panhandle, are associated with some groups occurring in the eastern part of the Mississippi Flyway. Most of the Canada geese in the Atlantic Flyway, however, are not involved to any significant degree with geese in other flyways.

Over-all distribution in the flyway is not the most desirable. Most of the Canadian honker population winters in

Reprinted with permission from the July 1966 issue of WILDLIFE IN NORTH CAROLINA.

the coastal areas of Delaware, Maryland, Virginia and North Carolina. Throughout the rest of the flyway there is only a scattering of small groups; the largest number (25,000-30,000 birds) is at the Santee National Wildlife Refuge in South Carolina. Starting from scratch, refuge management at Santee built the flock to its current size in about 15 years.

Who Gets Most of the Shooting?

In recent years, hunters in the states have bagged an average of a little over 100,000 birds a year. Most of the harvest (about 70 percent) takes place in the four states of Delaware, Maryland, Virginia and North Carolina. Only 20 percent of the goose kill occurs in the ten flyway states north of Delaware. Here we have an area through which most of the flyway's honkers migrate and where nearly 55 percent of the hunters live, but yet they get only about 20 percent of the Canadas bagged in the flyway. This illustrates the marked variation in kill between one part of the flyway and another. There are, of course, reasons for this which we will delve into later.

The kill of flyway geese in Canada isn't precisely known, but it is believed to be 25-30 percent of the total over-all harvest.

Geese Aren't as Productive as Ducks!

Many ducks nest when they are a year old. Canada geese, on the other hand, have to be at least two and usually three years old before they nest. In other words most Canadas don't breed until at least their third summer. This is important because it means that fall flights coming south will usually be dominated by adults and yearlings. Generally, the newly fledged young make up between 30 and 40 percent of the fall flight. In years of poor production considerably less than 30 percent of the flight will be young of the year and it would be a most unusual chain of circumstances which would result in over half of the fall flight being composed of the current season's production.

Very likely 35 percent young in the flight leaving the breeding grounds would represent the average during recent years. This means that if we are at least to hold the level of the population, we have got to keep the Canadian and United States kill plus crippling loss and "natural" losses within this 35 percent figure. If fall flights run about 550,000 on an average, this means that no more than about 190,000 can be lost or killed from all causes if the population is to be maintained. If we want gradually to increase the population then we will have to see to it that less than a loss of 190,000 occurs on an average. To date the legal kill in Canada and the flyway has not been excessive but it is very likely close to the maximum allowable at current population levels.

Needed—A Canada Goose Management Program!

The Atlantic Waterfowl Council and its Technical Section is composed of administrators and technicians from each of the states in the flyway and the six eastern provinces of Canada. The organization was formed several years ago for the purpose of preserving waterfowl resources through collective planning and coordination of research and management programs. One of the working committees of the Technical Section has to do with Canada goose management. This committee has drawn up a proposed management program which has the following objectives:

An increased flyway population.

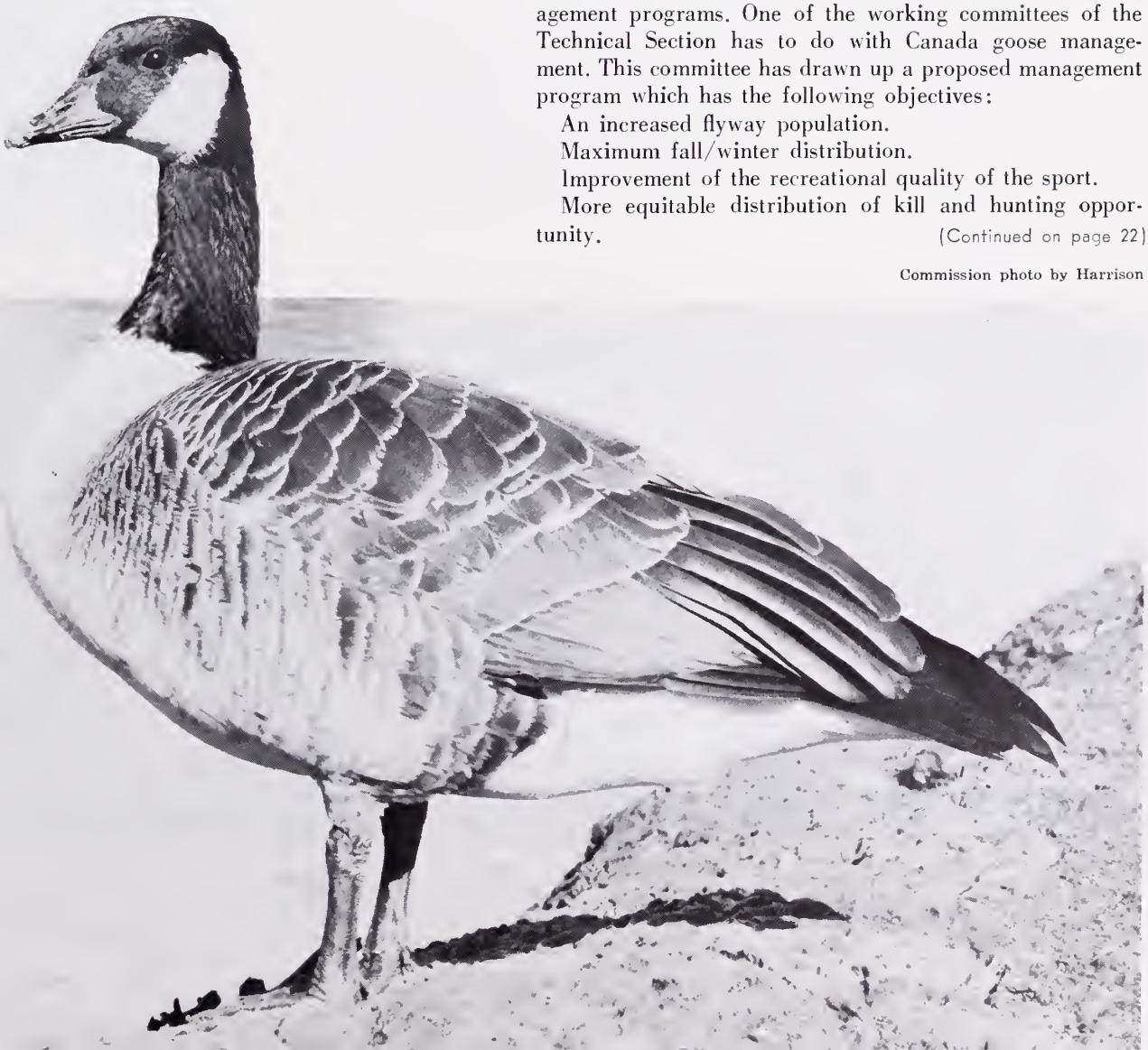
Maximum fall/winter distribution.

Improvement of the recreational quality of the sport.

More equitable distribution of kill and hunting opportunity.

(Continued on page 22)

Commission photo by Harrison



Two New Members Bring Game Commission Back Up To Full Strength

NEW CHAIRMAN AND VICE-CHAIRMAN ARE ELECTED

Commission photo by Kesteloo

E. FLOYD YATES

E. Floyd Yates, newly appointed Commission member from the Fourth Congressional District, is a Powhatan County farmer, banker and businessman. He is a director and past president of the Virginia Wildlife Federation, was first president of the Powhatan County Game Conservation Association, and is a former member of the Virginia House of Delegates where he served on the Game and Inland Fish Committee.

E. E. Edgar, Norfolk outdoor writer and businessman, was appointed to represent the Second Congressional District on the Commission of Game and Inland Fisheries. He is an honorary member of the Virginia Beach Anglers Club, Norfolk County Anglers Club and Virginia Beach Sand Witches, and is an active member of numerous civic and fraternal organizations.

Aufenger Studio photo, Norfolk

E. E. EDGAR

Commission photo by Kesteloo

I. T. WALKE, JR. J. CARGILL JOHNSON DR. E. C. NETTLES

Commission photo by Harrison

J. C. AARON

J. Cargill Johnson, newly elected chairman of the Commission of Game and Inland Fisheries, admires the certificates of appreciation awarded by Governor Godwin to former chairman Nettles and former vice-chairman Walke upon their retirement. J. C. Aaron is the Commission's new vice-chairman.

VIRGINIA WILDLIFE ☆ ☆ ☆ ☆

CONSERVATIONGRAM

Commission Activities and Late Wildlife News . . . At A Glance

COUNTIES RECEIVE $4,958 FROM TIMBER SALES ON GAME LANDS. Some 12 Virginia counties have received a total of $4,958.89 in lieu of taxes from timber sales on Wildlife Management Areas owned by the Commission of Game and Inland Fisheries. The procedure whereby counties would receive 25% of the net proceeds from timber sales on Wildlife Management Areas located within the county was established by the 1964 General Assembly. This is the second year that payments have been made under this program.

Timber sales have become the main game management tool on Commission-owned lands since maximum game habitat improvement can be accomplished this way at minimum cost to sportsmen. The Commission's share of timber sale proceeds goes toward maintenance, management supervision and law enforcement on these lands.

Most of the Game Commission's timber sales are thinning operations whereby dense stands of young hardwoods are opened up to allow sunlight to penetrate and to promote better growth of the remaining trees. Selective cutting allows mast and fruit species attractive to game to remain while less important trees are removed. Sprout growth from the stumps of harvested trees provides a bonus of deer browse for several years.

JULY 1, 1965 THROUGH JUNE 30, 1966

County	Payment Received
Augusta	$300.28
Bath	666.74
Highland	81.59
Greene	169.10
Madison	869.04
Patrick	19.60
Powhatan	1,030.82
Roanoke	54.55
Rockbridge	683.75
Rockingham	257.13
Smyth	769.27
Tazewell	57.02
Total	$4,958.89

LATER DOVE SEASON SET BY COMMISSION. A split dove season totaling 70 half days and beginning somewhat later than last year was selected by the Virginia Commission of Game and Inland Fisheries from the framework handed down by the U. S. Fish and Wildlife Service. The first half of the split dove season was set to open September 17 and close November 5. The second half would extend from December 19 through January 7.

The bag limit for the 1966-67 season will again be 12 birds per day with a possession limit of 24, the maximum permitted by the framework. As usual, shooting will be limited to the period from 12 noon, standard time, until sunset each day.

A rail and gallinule season beginning September 9 (Friday) and extending through November 17 was selected to coincide with predicted high tides occurring at the beginning and end of this period. A daily limit of 15 and a possession limit of 30 for all species combined was established.

Woodcock season was set to open November 21 and close January 9 with a bag limit of 5 daily and 10 in possession. Snipe season will also be open during this period with a daily bag limit of 8 and a possession limit of 16.

OUR EXPERIENCE WITH EXOTICS

SINCE the earliest days of its history, the United States has served as the testing ground for the intentional and accidental stocking of literally thousands of animals from abroad. Fortunately perhaps, most of the arrivals failed to establish themselves. Some, such as the Norway rat, starling and house sparrow have become our most pernicious pests. Yet, several deliberate introductions have proved to be valuable additions to the native American fauna, and support substantial recreation-oriented economies.

The history of the introduction of foreign species into the United States can be separated into two phases:

1. The early unplanned, uncontrolled introductions which have usually resulted in species being brought in, disappearing completely, or establishing themselves as residents to become pests causing untold millions of dollars in damage to habitations and crops.
2. Recent introductions based on scientific principles and practices to insure a relative measure of success with a minimum of hazard to the ecology of the receiving area or to its resident species.

Birds apparently were the first interest of early colonists for introduction, although the history of species and introduction to this country is mostly clothed in darkness. However, it seems apparent that even though early America had a wealth of animals and plants there was still a longing for living souvenirs of the old country among the people who came here from the other parts of the world. In addition, the colonists were intensely practical men who recognized that wildlife could help feed and clothe them.

For example, ten years after the Declaration of Independence, George Washington was the recipient of a shipment of foreign game birds. In 1786, his friend, the Marquis de Lafayette, sent him several kinds of pheasants and a pair of French or red-legged partridges, *Alectoris rufa*. Also, Richard Bache, a son-in-law of Benjamin Franklin, introduced English pheasants, *Phasianus colchicus*, and gray partridges, *Perdix perdix*, to his estate in New Jersey in 1790. There is no evidence that any spread from these early trials.

Until recently, the introduction of foreign fauna has been haphazard, without attention to the ecological requirements of the species or of their possible adverse effects. As a result, few species have persisted which are desirable. Among those which have become established, some have produced disastrous effects on the existing environment and the economy of the people. A regrettable feature, until very recently, has been a neglect to record the facts, with the result that much of the significance of these introduction experiments has been lost to the scientific record.

Birds

Periods of activity in introduction of foreign birds began in the late 1860's. Since then, limited information is available on what was attempted. For a period of 15 or 20 years, unsuccessful efforts were made to introduce species of European songbirds, largely through the enthusiasm of German-American bird fanciers and various cage-bird clubs.

In the late 1870's the migratory coturnix quail was the subject of a virtual introduction craze all of which were unsuccessful. Little attention was paid to foreign game birds from then until after the successful introduction of Chinese ring-necked pheasants, *Phasianus colchicus torquatus*, into Oregon in 1881. This event triggered great enthusiasm for pheasants, and ringnecks of various origins—including Chinese, Mongolian and English—were set out indiscriminately all over the country. From these plantings, large Chinese pheasant populations have built up in the central, northern and northwestern farmland. At the present time, the species has an extensive range in these parts of the United States.

The gray or Hungarian or European partridge came next and has also enjoyed great success from large shipments liberated just before World War I. These have succeeded in the drier, grain-producing farmland of the extreme north central part of the country after failures elsewhere.

Interest in the chukar partridge, one of the three foreign game species to become established in the United States, was late in getting started, although five pairs were liberated in Illinois as early as 1893. After 1928, however, interest increased rapidly with numerous trials all over the country until the species became well established in the arid Great Basin foothills in the late 1930's.

The black francolin, *Francolinus francolinus*, was im-

Extracts of presentation by John S. Gottschalk, Director, Bureau of Sport Fisheries and Wildlife, U. S. Department of the Interior, at the Ninth General Assembly and Tenth Technical Meeting, International Union for the Conservation of Nature and Natural Resources, Lucerne, Switzerland, June 1966.

Commission photo by Harrison

Some foreign bird introductions, such as that of the starling (above), have been notoriously successful. Others, like that of the Reeves pheasant (left), have resulted in failure.

ported unsuccessfully into Illinois in 1891. In recent years the Foreign Game Introduction Program has given much attention to this species and the gray francolin, *Francolinus pondicerianus*, and considers them candidates for successful introduction for some areas in central southern parts of this country.

Reeves pheasant, *Syrmaticus reevesii*, recently was given a thorough trial by the State Conservation Department in Ohio. The results were not encouraging. The silver pheasant, *Gennaeus nycthemerus*, has been tried unsuccessfully on a small scale in the State of Washington. Kalij pheasants, *Lophura leucomelana*, have been the subject of considerable study, and as a result are recommended for trial introductions under the Foreign Game Introduction Program. Likewise, the red junglefowl, *Gallus gallus*, another forest-inhabiting pheasant, studied intensively in India, has been considered a likely candidate for establishment in game-deficient wooded sections of the southeastern United States.

Golden pheasants, *Chrysolophus pictus*, have been liberated many times in the country starting with a pair sent to George Washington by Lafayette in 1786. In addition to Virginia, liberation has been in such widely separated places as California, Washington State and Illinois. No success is indicated.

Both the copper pheasant, *Syrmaticus soemmerringii*, and the green pheasant, *Phasianus versicolor*, of Japan have had limited trials starting in the Northwest about 1885. Recently, the Foreign Game Introduction Program has given attention to both of these species and the green pheasant has shown signs of becoming established in coastal Virginia.

Among songbirds, many attempts at introduction of numerous species have been made, mostly for sentimental reasons. The house sparrow, *Passer domesticus*, and starling, *Sturnus vulgaris*, have been notorious successes. The European tree sparrow, *Passer montanus*, a close relative of the house sparrow, persists in a small area about St. Louis, Missouri. The skylark, *Alauda arvensis*, and European goldfinch, *Carduelis carduelis*, have been liberated in many places in the United States and have always disappeared. Very recently the spotted-breasted oriole, *Icterus pectoralis*, blue-gray tanager, *Thraupis virens*, and red-whiskered bulbul, *Pycnonotus jocosus*, have apparently become acclimated in the vicinity of Miami, Florida, after escaping from aviaries.

Mammals

Probably none of the terrestrial mammals (except domesticated forms) have been as generally successful as certain game birds. Most introduced mammal species have failed to survive. Of those which did, the majority became destructive, and undesirable, such as the house rat, *Rattus norvegicus*, and mouse, *Mus musculus*, the mongoose, *Herpests sp.* and

(Continued on page 18)

Photo by L. L. Rue III

Commission photo by Harrison

The success of the Chinese ring-necked pheasant (left) in adapting to conditions in the north and central farmlands has not been repeated in our southern states. Most introduced mammals have failed to survive, and of those which have become established, a majority, like the nutria (right), have turned out to be destructive and undesirable.

NEW TECHNOLOGY BREAKTHROUGH SOUGHT IN POLLUTION FIGHT

PROBLEMS OF COMBINED STORM AND SANITARY SEWER SYSTEMS TO GET INTENSIVE ENGINEERING STUDY

SECRETARY of the Interior Stewart L. Udall has approved a "new approach" to one of the Nation's most vexing water pollution problems—one which affects nearly one-third of the population of the United States.

In announcing an $870,750 demonstration grant to the Minneapolis-St. Paul Sanitary District, the first under a new program authorized by the Water Quality Act of 1965, Secretary Udall said. "Pollution is the conservation scandal of our generation, and we can no longer rely on an unspoken assumption that science will come up with solutions later. We must forge ahead now with action programs on many fronts."

The demonstration grant, which would be matched by the Sanitary District, is aimed at solving a national pollution problem stemming from the discharge of sewage and wastes in systems also used to carry storm waters.

Secretary Udall said. "About 59 million Americans live in 1,900 communities with at least part of their sewage systems combining storm waters and sanitary wastes. During and immediately after rains, these sewers create major pollution problems in our rivers and streams."

"The Minneapolis-St. Paul project will bring a new, creative engineering to bear upon the problem," Secretary Udall stated, "and the lessons learned there could constitute not only a major technological breakthrough but also result in saving millions of dollars and precious years in cleaning up our waters."

The important objective of the project, Secretary Udall said, is to demonstrate the more efficient use of existing storage capacity of sewer systems so that wastes can be stored for later treatment after storm waters recede. During and after storms, the Minneapolis-St. Paul sanitary system discharges wastes in volumes greater than can be treated by conventional sewage treatment plants, a condition existing in many parts of the nation.

"The more efficient use of sewer systems through modern control methods can reduce wastes discharged into the Mississippi River at Minneapolis-St. Paul by as much as 70 percent." Secretary Udall said. "Equally important, it is anticipated that the project will demonstrate that the control system can prevent pollution in the next two years equivalent to that originally considered possible over a 20- to 40-year planned separation of storm and sanitary sewers. Here, indeed, are lessons to be learned with application in many other communities."

PHOTOGRAPHERS GO OVERBOARD

CAMERA enthusiasts are now joining the ranks of fish watchers and other underwater hobbyists in their invasion of Neptune's realm. With inexpensive underwater cameras now readily available, any photo bug can go underwater and make good shots of aquatic life.

Underwater photography is not only for sport. Photographs of fishes and other kinds of aquatic creatures are sorely needed for scientific study. There is so little known about life in the water that any observation may be a useful find, particularly if backed up by a photo.

The facts and photos are wanted by the American Littoral Society, an organization of amateur and professional naturalists and conservationists concerned with aquatic life. The Society publishes illustrated reports by fish watchers in its publication, founded in 1962, "The Aquatic Reporter and Underwater Naturalist."

Editor Roland Woolson says, "This is what we want to find out and then publish—how are fishes and aquatic animals living their private lives in their own neighborhoods? We are looking for candid shots of fishes and other marine animals going about their daily routines in a perfectly normal way, unaware that they are on 'candid camera'."

Mr. Woolson pointed out that although many of the country's top photographers are Society members, "some of the best photos published are the work of amateurs." "Any photograph has value," he said, "if it shows a marine animal *doing* something—feeding, spawning, defending its nest, or engaging in courtship behavior."

"It doesn't necessarily take professional skill and an expensive camera," Mr. Woolson said, "but it does take the qualities that any good camera bug needs to make a good action shot; patience, an ability to observe, and the knack of being in the right place at the right time. And who knows —the snoop with a camera may find a 'scoop' for science!"

American Littoral Society photo by William M. Stephens

Geologist photographs corals on Carysfort Reef, off Key Largo, Florida, as part of a program to study the growth rate of corals.

The Society is setting up special programs for its photographer members and is preparing a special booklet with tips for underwater nature photographers. Interested shutter bugs are asked to contact the American Littoral Society, Sandy Hook Marine Laboratory, Highlands, New Jersey.

"Fishfotogs," through experience, will learn the little tricks that help produce sharper pictures. The local swimming pool is an excellent place to practice this new skill.

American Littoral Society photo by Paul Tzimoulis

Our Experience With Exotics (Continued from page 15)

the nutria, *Myocaster coypu*. As early as 1889, Dr. T. S. Palmer called attention to the risks involved in introducing such species.

The brown rat, *R. norvegicus*, is thought to have originated in central or southeastern Asia. This rodent was introduced into the American colonies in 1775 and has since spread to every state. Rats eat millions of bushels of grain each year and carry many diseases.

At the time of the colonization of North America by Europeans, the native red fox, *Vulpes fulva*, apparently occurred only in what is now Canada, Alaska, and the United States roughly north of Pennsylvania. Between 1650 and 1750 red foxes, for hunting purposes, were introduced from England into Virginia and the country further south. They survived, spread, and apparently crossed with the native red foxes to the north. Foxes are occasional destroyers of poultry and are reservoirs of rabies and other diseases.

The original range of the native North American red fox covered only the territory which is now Alaska, Canada and our northern states. Red foxes introduced into Virginia from England during colonial days survived, spread, crossed with the natives, and extended the range of the red fox over most of the continental United States.

The European and Russian races of wild boar were introduced into New Hampshire in 1889, and into North Carolina in 1912. They have since spread from these original sites. Some of the Carolina stock were later transplanted to California (1924), and to Hawaii, where a total population of 80,000 was estimated in 1964. As game animals they are favored by some sportsmen. However, they do compete with native species, may do considerable damage to local crops, and are subject to cholera and other diseases.

During our Civil War, a number of camels were introduced for possible use by the Army as draft animals. Several attempts were made to establish them in Texas, Cuba, Jamaica and South America; all were unsuccessful. The camels introduced into our country survived for many years in our southwestern deserts before finally disappearing.

Between 1891 and 1902, the semi-domesticated Old World reindeer, *Rangifer tarandus*, were introduced from Siberia to Alaska in an attempt to improve the economy of the native Eskimos. At first they thrived and increased, but then declined. Their history in Alaska has been erratic owing largely to a lack of knowledge of proper management procedures. In 1929 a herd of 2400 was sold to Canada, and the offspring of this herd still persist, providing food for the native peoples and thus aiding in the economy of our northern areas. They also have competed with, and tended to hybridize with, the native caribou. Disadvantageously, they damage the delicate Arctic range considerably by overgrazing.

The Modern Program

Recent and current programs have been designed primarily to augment the natural stocks of game animals in the United States, particularly birds. Although America has always had a rich outdoor legacy, originating in early colonial days, the demand for recreation through fishing and hunting has grown tremendously.

Nationwide surveys of hunting and fishing conducted in 1955 and 1960, show the scope and magnitude of fishing and hunting in America:

"A detailed study of participation in these sports, including types of fishing and hunting, expenditures, mileage traveled and the like, was made of the more active sport fishermen and hunters, who for the most part, were licensed or, if unlicensed, either took part in these sports on several occasions or reported at least a modest expenditure for these activities. This study—the NATIONAL SURVEY OF FISHING AND HUNTING—revealed an estimated 30 million sport fishermen or hunters in 1960, some 23 percent of the population 12 years old and over. These more substantial participants reported around 650 million recreation days of fishing and hunting and an expenditure of close to 4 billion dollars on these pastimes. As compared with a similar survey conducted in 1955, the number of these sportsmen had increased by over 5 million and their expenditures by 1 billion dollars."

The preceding illustrates the interest in these sports by the American public and also shows the role they play both personally and economically in the lives of a large portion of the population.

As the responsible federal agency, the Department of the Interior, Bureau of Sport Fisheries and Wildlife, is vitally concerned with introductions of foreign fauna for several reasons. We are obligated to protect our citizens against harmful effects on existing natural resources by unplanned foreign introductions, and on the other hand, to supplement these resources with desirable additions from abroad. We recognize the fact that this is a difficult ecological problem.

A growing awareness is developing that attention must be paid to all aspects of proposed actions affecting natural resources, particularly those involving subtle biological effects.

This awareness was slow in starting. Unfortunately, in the economic and intellectual growth to our present status there were many mistakes involving exploitation of plants and animals. Since the colonists first arrived, our country lost the passenger pigeon, the heath hen, the Carolina parakeet, the sea mink and many others—all bitter commentaries on a failure to understand the importance of conservation practices.

Today, the conservation movement is stronger. Once again, we can see the bison, the whooping crane, the trumpeter swan, the sea otter, the fur seal and other species that were brought to the verge of extinction—but saved. For them, conservation consciousness came in time and they survive through good management and understanding of their ecological requirements.

We must contend with many factors resulting from constantly changing land use. Our population is increasing very rapidly and land, formerly providing habitat for certain species, is being converted into great urban areas. The so-called "clean farming" with new types of farm equipment, heavy grazing, and chemical control of weeds all cause changes which may not meet the needs of the native fauna. Thus, species which thrived under one set of environmental conditions may not survive when these are changed. Consequently, there is a decrease in game abundance and, in some instances, of the species withdrawn from the former range. One example is the prairie chicken, formerly resident over a large area from the North Central States south to Texas. Initially responding favorably to very limited and primitive farming which first invaded its native grasslands environment, it declined drastically after overgrazing and use of its range for modern agricultural purposes, and occasional over-hunting.

There are large areas in the United States which have never been occupied by more than one or two species of game birds and, in some cases, none at all. We have focused our attention on these regions. One example is a large part of the arid West that was sparsely stocked with native game birds until the chukar partridge was introduced. Now, in this region, excellent upland game hunting is available since the chukar has survived as a successful resident in some of the arid rimrock and foothill country.

In general it appears that the wildlife of the Old World has shown far greater ability than that of the New to survive despite man's occupation of the land. It is logical, therefore, when seeking species for transplanting to a well populated country to utilize those species that have been tested and tempered by countless centuries of close association with man.

We recognize the hazards in introductions and have attempted to avoid them while also trying to meet the demands for additional wildlife resources in certain areas. We have established certain criteria that must be considered before a candidate species is released into the wild. Questions which must be satisfied include:

1. Does a niche occur in a particular environment that is devoid of a native species?
2. Is there a habitat type in which native species are not sufficiently abundant to provide reasonable harvests?
3. Do habitats exist which have been modified by agriculture and other human activities to the point that they can no longer support native species?
4. Will a species threatened with extinction in its native range find a similar and suitable habitat in a different geographic area without posing a threat to native species already occupying that habitat in the new area?

In the past, candidate species for introduction have been

(Continued on next page)

Over one fourth of all game birds harvested in the United States are introduced exotics, mostly pheasants.

Leonard Lee Rue photo

sought and their characteristics assessed for value in supplying additional hunting recreation. Another conceivable objective has received some attention: Use of the Introduction Program to assist in the preservation of rare and endangered species. The great upsurge of the public's consciousness over its responsibility for preventing any more species from becoming extinct gives greater emphasis to

The francolins are considered candidates for successful introduction into some areas in the central and southern parts of the country.

this objective.

A special concern is the effects of introductions on the ecology of various environments in which the new species are to be tried. We evaluate ecological-niche relationships of both existing and candidate species to determine their similarities and differences, and to provide a basis for estimating the effects of introductions on the native fauna. We are aware that a new species may serve as a reservoir for new diseases or parasites detrimental to native species, and that it may offer serious competition to native species or possibly be a predator in the new environment. Lastly, and not the least important, will it, because of possible close genetic relationship, interbreed with a native species, thus upsetting the genetic adaptation to its environment acquired through many generations of natural selection?

Economic implications must be carefully considered. The exotic starling and house sparrow do millions of dollars worth of crop damage each year, and the domestic pigeon, or rock dove, has gone feral and become a pest. In our cities, all three birds foul public buildings, and their droppings are loci for diseases which affect humans.

Game production habitat in the United States is decreasing under the impact of human activities such as clean farming, scientific forestry, overgrazing, drainage, pesticides, declining soil fertility, and urbanization. All contribute to a decline in the abundance of native game birds and limit their distribution.

We conducted a survey (1955), through game departments in the fifty States who reported on the amount, distribution, types and characteristics of understocked habitats. The results indicated that over one-fifth of the land area of the United States is understocked with game species. Some areas had no native game birds. In others, game bird populations were very low.

For the Foreign Game Introduction Program these are the target areas. They afford the possibility of locating and introducing an adaptable exotic game bird that might thrive without creating serious problems for man or the resident wildlife. There are limited risks involved, but there are also very substantial rewards. For example, in a normal year our hunters harvest 50 million game birds, including 10-12 million pheasants, 4 million gray (Hungarian) partridges, and 1 million chukars. These provide nearly thirty percent of the total game bird harvest. As far as has been determined, none of the three are incompatible with native species. Also, the first two are tolerant of agricultural practices and the third inhabits an area where only a scattering of native game birds is found. Without them, there would be substantially less recreational hunting in the United States.

Our program is particularly concerned with birds. It is known as the Foreign Game Introduction Program. It originated in 1948 and has two objectives:

1. To discourage unwise game bird introductions by making careful biological evaluations in advance of any importations.

The Japanese green pheasant has shown an ability to survive and reproduce in some sections of Virginia.

2. To meet a real recreational need by filling vacant niches with attractive, adaptable game species.

This program is a cooperative effort between the various State game departments, the Federal government, and a private concern, The Wildlife Management Institute.

Studies are made to define world analogues for continental United States areas, and candidate game species are selected. We perform on-the-spot study of habitats, characteristics and requirements of candidate species, and coordinate this with state game departments for trial consideration. Biologists are assigned overseas to select the candidate species. We require intensive study in the foreign country to define the habits, habitats, hazards and potential of the species, particularly with regard to its chances of survival in the United States without competing unduly with existing native species or becoming a pest. Finally, it is necessary to secure, ship and quarantine adequate numbers of birds for field release with cooperating states in habitats believed to be suitable.

Since 1950, more than 100 varieties of foreign game birds have been considered. Of these, 18 have been selected for intensive study before trial release in 45 states.

Thus far in the appraisal of overall program results, there have been indications of both success and failure. In addition to the two Iranian pheasants already mentioned,

black and gray francolins have demonstrated an ability to survive, reproduce and increase in release areas. Conversely, the Indian sandgrouse, *Pterocles exustus hindustan*, and Reeves pheasants have not succeeded. Six other species are holding their own sufficiently to justify guarded optimism.

The unplanned, hit-or-miss character of almost all of the early introductions was the prime reason for their failure. The people who desired to acclimatize the foreign species to our shores did not have the scientific acumen to fully evaluate differences in climate and habitat between their old and new countries. Many species were introduced into areas completely different from their original homes, with the result that they failed to "take" and disappeared. Also, the long periods required for sea transit without necessary fresh foods and proper caging caused animals and birds to arrive in a weakened physical condition, thus reducing their chances of survival.

Recently, an additional facet became apparent in foreign introductions: There exists within a species variant populations or subspecies which have differing transplant capabilities. For example, the subspecies of ring-necked pheasant from northern China, which was so successful in the northern United States, failed in our southern states despite numerous attempts; however, the subspecies from Iran has been tried in Virginia and gives strong indication of being successful.

Dr. Gardiner Bump, biologist in charge of our program in Argentina, has listed reasons for the possible failures of promising candidate species. These can be summarized as follows:

1. Failure to liberate in the proper habitat or failure to use proper methods in liberations.
2. Poor physical condition of the liberated game precluded survival.
3. Failure to properly condition game farm raised birds before liberation.
4. Failure to release sufficient numbers of specimens to ensure a breeding potential over a period of time.
5. Failure to ensure protection in losses resulting from predators or hunting pressure.

Kalij pheasants, after considerable study, were recommended for trial introductions in western Virginia and similar areas.

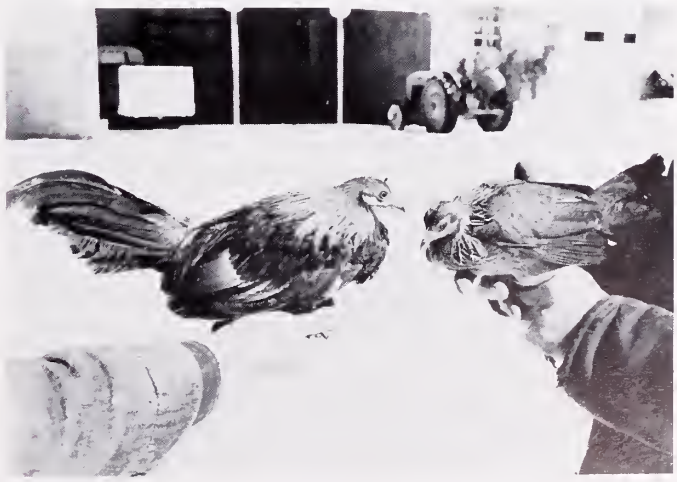
In addition, the time that is required to assess the success or failure of an introduction activity is often not realized. Thus, success of a program may entail as much as five to twenty years before an evaluation can be made regarding any specific species. We know the ring-necked pheasant required years and many tries before it finally "took." For this reason, we have, perforce, been guarded in our statements regarding our efforts.

The Iranian subspecies has proved more adaptable to conditions in Virginia and other southeastern states than the subspecies from northern China which was so successful in northern United States.

The program has been successful in that many of the fears of critics have been proven to be groundless. None of the candidates released have usurped the normal ranges or habitats of native species, nor have our releases brought into the country game diseases which were disastrous to native species. Further, there has not been any widespread hybridizing with resident game to the disadvantage of native populations. Our experiences have demonstrated that ecological dovetailing into the prospective habitat has been the major factor in success of our activities.

From its start the program has been controversial. Some look on efforts with exotics as unnecessary and unwise. Also, there is the aesthetic objection to mixing foreign and native faunae. And, in addition, there is the more practical concern about adding foreign forms of life without knowing the biological and economic consequences.

On the other hand, many parts of our country have changed irreversibly as a result of human population movement and consequent agriculture and industry. In these, resident native species have become extirpated because they were intolerant of habitat changes. The foreign introduction program takes cognizance of this and seeks to bring a species that can exist in such areas, succeed and become established.



The red junglefowl, considered a likely candidate for introduction into wooded areas in the southeastern states, was unable to withstand winter temperatures as far north as Virginia.

Honker—Game Bird of the Future?

(Continued from page 11)

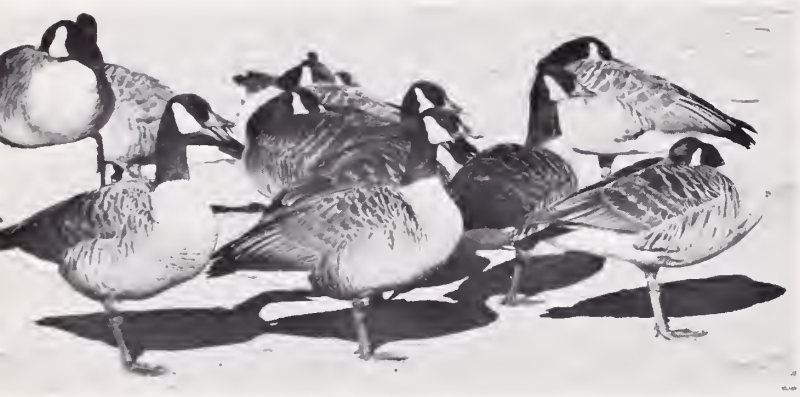
Reduction in the waste of birds.

These are worthy goals but let's take a look at what needs to be done to attain them.

We mentioned previously that it is believed that the breeding grounds could support more birds. If this is so, then all we need to do to build the flyway wintering population to three quarters of a million or perhaps a million birds would be to provide enough suitable wintering habitat and send more birds back to the breeding grounds each year. In time we would reach our goal, but of course we could expect some setback since top breeding conditions aren't going to occur every year.

At present the honker congregates in large numbers at relatively few locations in the flyway. The reason for this is that ample agricultural foods together with adequate nearby sanctuaries make these particular areas very attractive to geese. With the advent of the mechanical corn picker on the eastern shore of Maryland the goose population started to build. Nowadays, providing for goose populations and hunting on the eastern shore is an important consideration in the agricultural program of the area.

In a smaller way the eastern shore situation could be duplicated at many other locations in the flyway if the local



Commission photo by Harrison

people wanted to and funds were available with which to get started. Particularly worthy of consideration is the upper Coastal Plain and the Piedmont from Virginia south to northern Florida. In these regions there would be many locations where habitat and sanctuary could readily support goose flocks of several thousand birds each. In some situations where agricultural fields are already available, the principal need at the start would be merely the setting up of an inviolate sanctuary with some decoy birds and perhaps closing the season locally until the flock becomes well established. At any rate, a major item in the future management program for the Canada goose will be to encourage the establishment of many new wintering goose flocks in the southern part of the flyway.

Starting new wintering flocks and developing additional harvest areas in the north will contribute materially to wide distribution of the birds and better distribution of hunting opportunity. To do this, however, some major problems have to be solved.

Too Many Geese?—At Some Locations, Perhaps

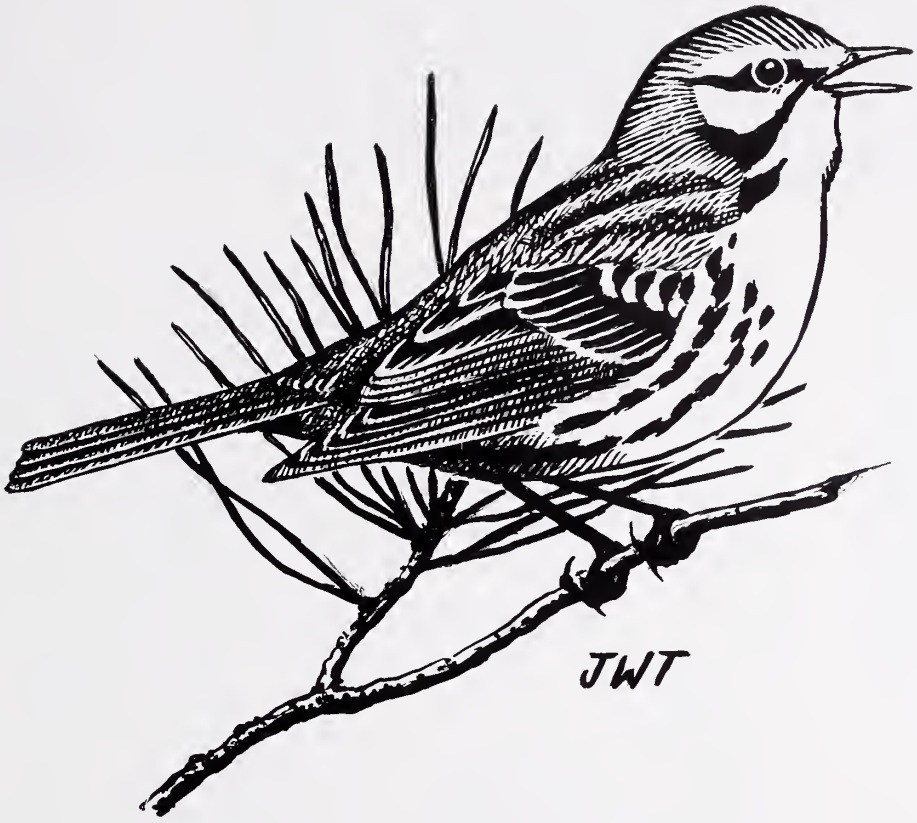
One of these problems is the need to prevent excessive concentrations of birds on limited local areas, particularly in the northern part of the flyway.

Although a problem in this regard may be developing

Commission photo by Harrison

in Delaware, the Atlantic Flyway as a whole has been relatively free of problems associated with unnatural build-ups on restricted areas. To be sure, the bulk of the flyway's goose population winters in the coastal area of Delaware, Maryland, Virginia and North Carolina. And within this coastal zone there are undoubtedly some limited areas where unnecessarily large numbers of birds occur. But, when one looks at this whole coastal area as an over-all wintering unit, one realizes that the habitats are quite extensive, the birds are widely dispersed and are available to hunters over much of the area. On migration areas, however, the situation could be different. As more management areas are established in the northern part of the flyway and Canada we must be careful that large numbers of birds (25,000 or more) aren't held on these areas for extended periods into the fall and early winter. The holding of birds in this manner might cause serious depredations on nearby crops, encourage poor quality "firing line" type shooting along the boundaries of the area and prevent many hunters, particularly those to the south, from obtaining their fair share of the birds.

Next Month: Part 2. Getting More Geese to Us.



Bird of the Month:

Prairie Warbler

By DR. J. J. MURRAY
Lexington

HERE is one bird that is certainly more common in the eastern United States now than it was in the days before the white man came to Virginia. This bird prefers shrubby fields. There were few of these in the old days. Even when the Indians cleared land for big game hunting, they kept it open when once cleared. It is the white man's wasteful method of cutting the timber and then leaving the land in brush, or, after using the land for a few years and wearing it out, letting it go back to brush that makes so much prairie warbler habitat today.

This warbler in its choice of nesting territory has very definite requirements. The name given to the bird is unfortunate. It does not nest on the prairie, but the scrub growth. It does not like the woods. It likes brushy pastures with a few scattered trees. Poor land seems to suit it best. Common in the open "lights" in the Dismal Swamp, it occurs all over Virginia except on the highest mountains.

The most distinctive thing about the prairie warbler is the carrying power of its song. It is unusual in pattern, a succession of six or seven ascending "zee-zee-zees." It is unusual, too, in its penetrative quality. I do not believe I ever miss this little song when driving along a noisy highway through the scrub areas where it nests. It has a thrust that helps it to carry above what appear to be the much louder sounds of wind in the trees or traffic on the roads. Not one of the most attractive warbler songs, it is at least one of the most insistent.

The prairie warbler is a summer visitor with us. Extreme dates in Virginia are April 1 to October 3 with later arrival dates in the northern part of the state. Nests in Rockbridge are completed as early as the middle of May. In one which I watched throughout its building the female did all the work, with proper entertainment by the singing male. It was in a crotch, a rather deep nest, as much like the nest of a sparrow as like that of a warbler, made of fine straws and grasses and lined with small feathers and soft plant fibers.

There are three to five eggs in a full set, white but spotted or wreathed with brown or purplish at the large end. They are laid any time from May 10 to July 17, depending on whether first efforts are successful. I have seen young on the wing being fed as late as August 8.

This bird is a bright olive-green above. The male has spots of reddish on the back, the female fewer or even no spots. The sides are streaked with black, heavily in the male, indistinctly in the female. The male has yellowish wing bars. The outer tail feathers have white patches on the inner sides. This is one of the warblers that wag their tails.

Edited by HARRY GILLAM

Congress Approves Mount Rogers Recreation Area

Passed by both House and Senate, the bill establishing the Mount Rogers National Recreation Area in Virginia needs only the President's signature to go into effect.

The Mount Rogers facility is the second national recreation area to be established within the National Forest System administered by the Forest Service of the Department of Agriculture. First was the Seneca Knob Rocks recreation area in West Virginia, established last year.

As approved by the Congress, the area will consist of 154,000 acres, of which 84,000 are now in federal ownership. Of the remaining 70,000 the Department of Agriculture expects to acquire the fee or easements on 39,000 acres. Total acquisition costs are estimated at $3,100,000, with development costs estimated at $18,900,000.

Located in the Jefferson National Forest, the area extends from Damascus to New River along the Blue Ridge Mountains. Mount Rogers, 5,729 feet high, the highest point in Virginia, and Whitetop Mountain, 5,520 feet, are focal points but several other peaks will be included, all surrounded by high mountain meadows. High country vistas reveal timbered hills matted with mountain meadows and scored by occasional roads or clear mountain streams. The area is rich in botanical specimens and wildlife. Popular recreational pursuits include hiking, cycling, horseback riding, picnicking, camping, hunting, fishing, nature study, photography and touring. Hunting includes deer, grouse, and squirrel, with bear and bobcat encountered occasionally. Native trout are in the streams.

The Game Commission has special dove shooting areas on 8 of its Eastern Virginia Management Units. Sharpen up your shooting eye on these early season speedsters.

1966 Virginia All-State Rifle Teams

The Virginia State Rifle and Revolver Association recently announced its selection for the 1966 Collegiate and Scholastic Rifle Teams. Chosen for the Collegiate Team were (top row, left to right) John R. Osmers, VPI; Walter R. Walsh, Jr., VMI; Patton H. Breland, Jr., VPI; Richard C. Hawthorne, University of Virginia; and Francis A. Drake of VMI. Named to the Scholastic Team were (bottom row, left to right) Roger C. Estes, Washington Lee High; Cort L. Ohlsson, Washington-Lee; John W. Vaughan, Staunton Military Academy; James H. Geron, West Point High; and Eugene C. Jones of St. Emma Military Academy.

Sika Buck

This beautiful Sika buck was bagged by Gene Christenson of Silver Spring, Maryland, on last year's Assateague Island hunt. He bagged the well antlered buck, which weighed 87 pounds dressed, while hunting with members of the New Canton Hunt Club.

Crickenberger Receives Honor

Game Warden J. W. Crickenberger of Orange County was presented a citation by the Orange County High School FFA Chapter for his work with county young people. Among the specific activities which prompted the award were his efforts in the fields of gun safety, conservation and wildlife habitat development.

Pete Haney, winner of second place in the Wildlife Food Patch contest in Greene County last fall, with his sister Delores at the Conservation Exhibit held in the Silvette log cabin in May. The table displays a bluebird box made by the F.F.A. boys of Monroe High School for the Bluebird Trail of the Spotswood Trail Garden Club this spring. Delores holds a litterbag, made by the 4-H girls and sold at the exhibit. Part of the Spotswood Trail's House Tour and Flower Show, the cabin's Conservation Exhibit won an "Award of Distinction." Arranged by Mrs. Herbert Silvette, Shenandoah District Conservation Chairman, the purpose of the exhibit was to show "How many hands are joined to promote conservation in Virginia and the nation." Reprints from the covers of Virginia Wildlife decorate the wall.

4-H'ers Assist In Greene County Tour; Conservation Exhibit Featured

Assisting the Spotswood Trail Garden Club with its May 22 House Tour and Flower Show, 4-H members Rosemary and Dianne Olinger and Jackie and Delores Haney served as tour hostess aides and litterbag salesladies. The bags, embroidered with clover leaves, were made by members of the Ruckersville Village 4-H Clubs.

Open for the tour was an old log cabin on Route 33 west of Stanardsville. Restored by Dr. Herbert Silvette in 1963, it contained a special conservation exhibit, comprehensive in scope, which showed how the combined efforts of many dedicated organizations serve to promote conservation in Virginia and the nation, in an effort to preserve our national heritage.

The National Audubon Society, National Wildlife Federation, Izaak Walton League, Albemarle Chapter Daughters of the American Revolution, Shenandoah Natural History Association, Save the Redwoods League of California, and the Virginia Commission of Game and Inland Fisheries were among the agencies contributing exhibit materials.

Winner of the Virginia Federation of Garden Clubs' State Conservation Award for the second year running, the Spotswood Trail Club is an outstanding example of garden club effort to promote conservation through good public relations.

Hanover Ruritans Promote Hunter Safety Classes for Youth

The Hanover Courthouse Ruritan Club is promoting hunter safety education for young people by asking all other Ruritan Clubs in the county to join in sponsoring instruction for seventh grade students beginning this fall. Cost per student is $.30 and would be less than $25.00 per club if all clubs participate. The classes have the full support of the superintendent of schools and school principals who have been contacted, said James C. Kelley, Jr., chairman of the Hanover Courthouse club's safety committee.

Each graduate of the four-hour course will receive a certificate of achievement, patch to wear on a hunting coat, identity card and handbook. The course would be taught to both boys and girls during school hours, and deals with respect for the landowner and his property, game laws, and safe gun practices.

Ten-year-old Gary L. Evans holds 21" largemouth bass taken from his family's Fauquier County farm pond. The fish was taken with rod and reel, using a small live frog for bait.

Richmond Natural History Society Awards Campership

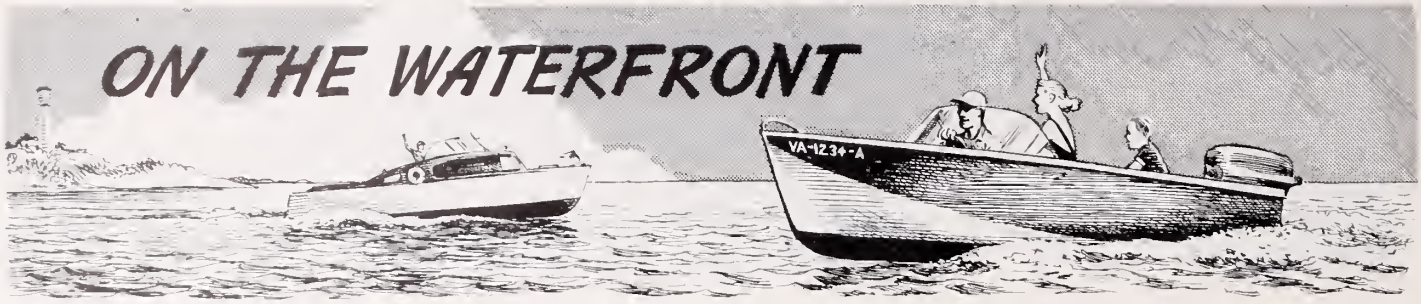
Jennifer Shopland, a student at Albert H. Hill Junior High School, Richmond, was chosen to be the recipient of a two-weeks' campership at Nature Camp, owned and operated by the Virginia Federation of Garden Clubs, Inc.

The award was made by the Richmond Natural History Society on the basis of the best paper submitted by student members on "Why I Want to Go to Nature Camp." This year is the second in which the Richmond Natural History Society is sponsoring a camper, the 1965 award having been made to James Wimbish.

Jennifer, the daughter of Mr. and Mrs. Charles E. Shopland, attended Nature Camp July 17-30, during which time instruction was given to grades 6-7.

These sixth and seventh graders of Pearson's Corner School last spring completed a hunter safety course sponsored by the Hanover Courthouse Ruritan Club. Instructors were James N. Kerrick, Game Commission Safety Officer, and W. R. Redford, Hanover County Game Warden.

Commission photo by Kerrick



Edited by JIM KERRICK

Beat the Heat: Take an Evening Cruise

It's another hot, muggy, night. No matter what you do, you can't cool off.

You're not alone in this everyday traditional late summer battle. Thousands more sweat it out with the hope of relief. But it doesn't have to be this way, as more and more boat owners are discovering. The secret weapon is an evening cruise, says the Evinrude News Service.

Thanks to the natural coolness of water, the air temperature over the water is generally several degrees lower. A soft breeze is also a real heat beater.

An evening cruise is something the whole family can enjoy. For dad, it's time for relaxation. For mom, it's a welcome escape from the hot kitchen. And the youngsters, well, the way they enjoy water you'd think they were part fish.

Just finding relief from the blistering heat is enough reason for boaters to give this evening cruise a try, but there's more to the story.

You'll soon discover a certain magic to twilight on the water. Sunset, which almost goes unnoticed at home, is a rare treat in beauty.

Nature seems to come alive. There's the noisy clatter of birds as they settle down for the night. Animals appear along the shore line for their evening drink. Across the water a fish breaks through the surface in pursuit of his supper. As darkness settles, silence sweeps across the water.

Be a good samaritan. On your next twilight outing invite one of your neighbors along. He'll thank you for it.

Nine Million Skiers Can't Be Wrong

There's one good reason why nine million Americans went skiing last year and that is because skiing is easy to learn. Unlike many sports that require a battery of expensive lessons before the fun ever starts, you can master the fundamentals of water skiing in an afternoon.

The dry instructional method is one way to make sure you'll be a fast learner. This is a simple form of instruction that can be given anywhere, at the beach or in your back yard. All you need is a pair of water skis, a tow rope and someone who can act as an instructor. This can be almost anyone with skiing experience, the more the better.

Dry land instruction has two basic

Skier putting on ski belt for safety before starting out.

aims: acquaint the skier with the feel of the skis and develop self confidence. Before you start the instruction do a few deep knee bends to loosen up the leg muscles and sharpen your sense of balance and coordination.

The most popular ski bindings are two-piece molded rubber units. The forward piece into which the foot is inserted is in a fixed position. The heel

Evinrude Motors photos

Method of dry land instruction before trying the water.

piece is mounted on small tracks and slides back and forth. Slide this piece forward for a snug, yet comfortable fit. If you're near the water, wet the bindings and your feet first. Because the bindings are rubber, your feet will slide in easier when they are wet.

Grasp the two-line handle and have your instructor lower you down into a sitting position. The skis should be placed about six inches apart, your knees together and arms outstretched. If done properly the tow line handle will be in front of your knees.

Your instructor should be positioned a few feet away from you with the tow line in hand. Have him pull you up slowly until you are in a standing position with knees slightly flexed. Practice this procedure at least several times before attempting actual water skiing.

Lifesaving Gear a Boating "Must"

Safety on the water is a matter of common sense and having a little foresight.

Always carry life preservers on a small craft. They are required by law and common sense alike. Preservers must be Coast Guard approved, and there must be an approved preserver on board for each person.

Hunters who utilize boats in their search for game should wear a preserver. In most cases the hunter is heavily dressed to combat the weather and the water is cold. With the added weight and cold water a person does not have much of a chance even if he can swim, but with the added precaution of a life preserver the chances of survival are much greater.

In the event your boat should capsize, stay with your boat. A boat can be located much easier than a man. In addition, a person can either climb onto the bottom of the boat or turn the boat over and climb back inside. One thing that a person can do when in cold water is to hang on the boat and keep legs and feet moving. This will keep the circulation going and help to keep you warm.

AUTUMN SCENE

A lull in the action

$3,000.00 IN PRIZES FOR Y

20TH ANNUAL WILDLIFE ESSAY CONTEST

Approved By
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Sponsored By
THE VIRGINIA COMMISSION OF GAME AND I
THE VIRGINIA DIVISION OF THE IZAAK W
OF AMERICA

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THE VIRGINIA RESOURCE-USE EDUCATI
THE RESOURCE-USE EDUCATION COMMI
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SEPT. 12, 1966 - JAN. 13,

WHY CONSERVATION OF WILDLIFE & OTHE RESOURCES IS OF PERSONAL CONCERN

ASK YOUR TEACHER TO
ENTER YOUR SCHOOL NOW

RULES

1. Students from all Virginia schools, grades 5-12 inclusive, are eligible.
2. Essays must be submitted through the schools participating. To be eligible, schools must submit an official entry card to receive materials.
3. Each essay submitted must indicate in the upper right hand corner: County, City, School, School Address, Principal, Grade, Name.
4. High school seniors competing for the scholarship must submit a completed scholarship form, obtainable from contest headquarters, attached to their essays.
5. Essays should not exceed 750 words.
6. Essays will be judged on the basis of originality, effort, grammar, expression and grasp of the subject. Final judging will be made by a panel of judges, representing the Commission of Game and Inland Fisheries, the Virginia Division of the Izaak Walton League of America, and the Virginia State Department of Education.
7. All essays must be sent prepaid or delivered to specified addresses and postmarked not later than January 13, 1967. For specific details see "Instruction Sheet to Teacher" found in the materials packet.
8. School awards will be made for 100 per cent student participation.

PRIZES

1 High School Senior Conservation Scholarship $800.00.
8 Grand Prize Awards, $50.00 each, one to each eligible grade.
8 Second Prizes, $25.00 each, one to each eligible grade.
24 Third Prizes, $15.00 each, three to each eligible grade.
24 Honorable Mention Prizes, $10.00 each, three to each eligible grade.
Special Mention Prizes, $5.00 each, divided among eligible grades in proportion to response.
School Awards.
The Scholarship Winner and the Eight Grand Prize Winners will come to Richmond as guests of honor of the sponsors and will have their awards presented to them by the Governor. Others will be given their awards in their schools.